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SOME AMERICAN *LEBERTIA*

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The genus *Lebertia* of the water-mites is easily recognized by the character of the epimera. It belongs to a small group of genera, the subfamily *Lebertiinae*, characterized by the union of the four pairs of epimera into a single group, with their more or less complete fusion. This forms a shield which covers a large part of the ventral surface of the body.

In *Lebertia* the first and second pairs of plates of the two sides are in contact, while the third is partly fused with the second and fourth. The third and fourth diverge from the median line, and in the bay thus formed lies the genital area. The latter consists of two oblong plates, each with three acetabula. The sexes are alike. The covering of the rest of the body is soft or thickened, striate, minutely papilliate or developing bits of chitin.

The palpi are small and leg-like; the second joint is stout, the fifth is very small, and all bear bristles or hairs. The legs increase markedly in size from the first to the fourth, and all are tipped with claws. They bear many stout bristles, and sometimes swimming hairs.

Dr. Sig Thor, the Norwegian hydrachnologist, who has made the most extensive studies in the *Lebertia*, divides the genus into six subgenera; however, the characters which separate the groups seem rather small and inconstant.

Over sixty species have been described; only three of these are from other regions than European, these being from Kamts-

chatka. *L. porosa* Thor, a widely distributed European species, has been found in Siberia. *L. tauiusignita* (Leb.) and *L. insignis* (Neum.) were reported by Doctor F. Koenike from Canada; but Doctor Thor thinks that these were not identical with the European forms. Three species are described in the present paper, two of which appear to be new. The *Lebertia* inhabit the colder waters, and this accounts for their very meager occurrence in the author's large collection of water-mites, which came chiefly from the Mississippi basin. One species, however, was found in the Waupaca Chain-o'-Lakes, lakes of glacial origin, in eastern Wisconsin; but the other two came from mountain lakes of the West. For the latter, the author is indebted to Mr. Chauncey Juday.

*Lebertia parmata* n. sp.

Pl. XXVII, Figs. 4, 5; Pl. XXVIII, Figs. 6, 7

This mite resembles *L. sparsicapillata* Thor closely, but is not identical with it, as has been determined by a comparison with a specimen of the European form sent to the author by Dr. Thor. The body is oblong, about 1.4 mm. in length. The color cannot be determined, as the material has been in preserving fluids. The group of epimera cover a relatively small part of the ventral surface. The cleft between the posterior ends of the second and third plates on each side is longer and wider than is common, and the space between the plates and the genital area is likewise greater. The posterior margin of the fourth epimera is narrow. The genital area is enclosed for only about two-thirds of its length by the approaching margins of the plates. The acetabula are of nearly equal size.

The epimera are covered with pores; the skin of the body at first appears smooth, but small pores and minute parallel striae can be made out by careful focusing. The large glands, of unknown function, described and figured by Thor (1902) for *L. porosa* were clearly seen close to the fourth epimera, with their long tubes extending to the capitulum (Pl. XXVII, Fig. 4).

The palpi have little to distinguish them from typical members. The last points of the legs are enlarged at the distal ends rather noticeably. There are stout bristles on all segments except the sixth, but no swimming hairs are present.

Four specimens of this species were found in material taken by Mr. Juday from Kern Lake, California, July 20, 1904.

*Lebertia artaacetabula* n. sp.

Pl. XXVII, Figs. 1-3

This mite is a small member of the genus, only about 0.8 mm. in length. The nymph measures 0.65 mm. The color cannot be determined. But one adult has been found, together with three nymphs. They were collected in the Waupaca Lakes, of Wisconsin, July 10, 1911. These are the only members of the genus found by the author in very extensive collections in that state extending over several years.

The epimeral shield covers the greater part of the ventral surface of the body, and extends back a little farther than the genital area. The genital plates are closely fitted into the bay thus formed by the epimera; they are distinctly narrowed at the anterior end. The chitinous bar at their posterior end is indistinct. The six acetabula are very narrow.

The skin appears to be very finely papillated; the epimera and the appendages bear fine pores. The last three pairs of legs bear a few swimming hairs. On the joints of all of the middle segments of the legs the broad saber-like bristles are conspicuous, especially at the distal ends.

*Lebertia porosa* Thor.

Pl. XXVIII, Figs. 8-11

This species is represented here by one individual only. This was found in Twin Lakes, Colorado, in the weeds near shore, by Mr. Chauncey Juday, in August, 1902. It measures about 1.6 mm.; the color cannot be determined.

Dr. Thor has kindly sent the author several specimens of *L. porosa* from Europe. A careful comparison of the American form with these shows but slight differences, such as the little greater width of the fourth epimera, differences which do not appear to justify the formation of a new species, or even a variety, based upon a knowledge of but a single specimen.

The epimera cover a relatively larger area of the body than in *L. parmata*, and the posterior inner angle of the fourth is conspicuously broader. The genital plates come up close to the epimera

and are enclosed by them for about three-fourths of their length. The last pair of acetabula are nearly circular. The skin is finely papilliate, with a few faint irregular lines. The appendages and plates have pores.

The second joint of the palpus is very stout and somewhat bent. The legs are rather slender, and there are not as many stout bristles on the joints as are found in the other two specimens here described. Swimming hairs, however, are found well developed on the fourth and fifth segment of the last two pairs of legs.

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## EXPLANATION OF PLATES

## Plate XXVII

- Fig. 1. *Lebertia artaacetabula*, ventral view.
- Fig. 2. *Lebertia artaacetabula*, palpus and legs, left side.
- Fig. 3. *Lebertia artaacetabula*, nymph.
- Fig. 4. *Lebertia parmata*, ventral view.
- Fig. 5. *Lebertia parmata*, genital field.

## Plate XXVIII

- Fig. 6. *Lebertia parmata*, right palpus, inner side.
- Fig. 7. *Lebertia parmata*, legs, right side.
- Fig. 8. *Lebertia porosa*, epimera and genital area.
- Fig. 9. *Lebertia porosa*, 1st leg.
- Fig. 10. *Lebertia porosa*, 2nd, 3rd, 4th legs, right side.
- Fig. 11. *Lebertia porosa*, right palpus, inner side.